

Notice of Allowability

Applicant(s)

09/583,502

Examiner

Kandasamy Thangavelu

Applicant(s)

DAS, JYOTI

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to August 4, 2004.
2. ☒ The allowed claim(s) is/are 1-36.
3. ☒ The drawings filed on 31 May 2000 and 06 November 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Introduction

1. This communication is in response to the Applicants' communications dated August 4, 2004. Claims 1-36 of the application are pending.

Petition to correct Inventorship granted

2. The Petition to correct Inventorship filed on November 6, 2003 under 37 CFR 1.48 (a) has been fully considered in view of the consent of the assignee regarding petition to correct inventorship file by MR. Holly Stratford on behalf of Solidworks on February 5, 2004. The petition to correct inventorship has been granted by the Primary Examiner as per MPEP 1002.02 (e).

Drawings

3. The drawings submitted on May 31, 2000 and November 6, 2003 are accepted.

Examiner's Amendment

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4. Authorization for this examiner's amendment was given in a telephone interview with Mr. James Mahon on December 6, 2004.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

5. The application has been amended as follows:

In the amended Claim 13, Lines 1-2, change:

“A computer program residing on a computer-readable medium, comprising instructions for causing a computer to”

to

--A computer program residing on a computer-readable medium, comprising instructions which when executed on a computer causing the computer to--.

In amended Claims 14 to 17, Line 1, change:

“The program apparatus of claim”

to

-- The computer program of claim --.

In amended Claim 18, Line 1, change:

“The program apparatus of claims 17”

to

-- The computer program of claim 17 --.

In amended Claims 19 to 24, Line 1, change:

“The program apparatus of claim”

to

-- The computer program of claim --.

Reasons for Allowance

6. Claims 1-36 of the application are allowed over prior art of record.

7. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a design information management system has 3-dimensional model data which includes constitution information indicating components of the device and the location information stored in a database; the 3-dimensional model data prepared during the design stage are stored in bulk servers; a design access device used during the design or manufacturing stages obtains the location data for each component of the device from the servers and based on the location data extracts the model data from the database of the servers; the design information access device uses the attribute information indicating if the component is a common component to notify all users when the design information is updated (**Yasue**, U.S. Patent 6,289,345);

(2) a layout verification system for verification of IC devices by efficiently performing design rule checks; a hierarchical tree describes device-level instances of the cells, layout geometry and child cells that describe other geometry; the hierarchical tree is derived from an attribute file that is generated from the high level description; the hierarchical tree establishes the parent-child relationship between the cells together with information regarding the location and orientation of the cells; design rule verification is performed to identify if the IC contains improper geometry or violates a design constraint (**Ho et al.**, U.S. Patent 6,011,911);

(3) three-dimensional model creation apparatus and method for accurate creation of the model through assembly of part models; the model creation apparatus comprises a part model creation unit having junction reference data for the junction with other part models; and an

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assembly processing unit for selecting at least two part models for arrangement in a work coordination space to junction the part models, to thereby assemble the three-dimensional object model; the creation of parts and the assembly of the arts are separated from each other; (Mukouchi et al., U.S. Patent 6,104,403).

8.1 Applicant's first set of claims consists of Claims 1-12.

Independent Claim 1 is directed to a computer-implemented method for restructuring a design model generated by a computer aided design system. The claim identifies the uniquely distinct features of:

“receiving at a computer a command to restructure the design model, the design model comprising a first hierarchical data structure interrelating a plurality of components and the command to restructure comprising a command to change a hierarchical relationship of a first subset of the plurality of components with respect to other ones of the plurality of components; in accordance with the command to restructure, generating a new hierarchical data structure comprising a new hierarchical relationship between the plurality of model components; determining other relationships between components in the first hierarchical data structure to change as a result of the command to restructure; and dynamically updating the other relationships to preserve the other relationships subsequent to the generation of the new hierarchical relationship”.

The closest prior art fails to teach or fairly suggest receiving at a computer a command to restructure the design model, the design model comprising a first hierarchical data structure

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interrelating a plurality of components and the command to restructure comprising a command to change a hierarchical relationship of a first subset of the plurality of components with respect to other ones of the plurality of components; in accordance with the command to restructure, generating a new hierarchical data structure comprising a new hierarchical relationship between the plurality of model components; determining other relationships between components in the first hierarchical data structure to change as a result of the command to restructure; and dynamically updating the other relationships to preserve the other relationships subsequent to the generation of the new hierarchical relationship. Therefore, Claims 1-12 are deemed novel and allowable.

8.2 Applicant's second set of claims consists of Claims 13-24.

Independent Claim 13 is directed to a computer program residing on a computer-readable medium, comprising instructions which when executed on a computer causing the computer to restructure a design model generated by a computer aided design system. The claim identifies the uniquely distinct features of:

“receive a command to restructure a design model generated by a computer aided design system, the design model comprising a first hierarchical data structure interrelating a plurality of components and the command to restructure comprising a command to change a hierarchical relationship of a first subset of the plurality of components with respect to other ones of the plurality of components;

in accordance with the command to restructure, generate a new hierarchical data structure comprising a new hierarchical relationship between the plurality of components;

determine other relationships between the plurality of components in the first hierarchical data structure to change as a result of the command to restructure; and
dynamically update the other relationships to preserve the other relationships subsequent to generation of the new hierarchical data structure”.

The closest prior art fails to teach or fairly suggest receive a command to restructure a design model generated by a computer aided design system, the design model comprising a first hierarchical data structure interrelating a plurality of components and the command to restructure comprising a command to change a hierarchical relationship of a first subset of the plurality of components with respect to other ones of the plurality of components; in accordance with the command to restructure, generate a new hierarchical data structure comprising a new hierarchical relationship between the plurality of components; determine other relationships between the plurality of components in the first hierarchical data structure to change as a result of the command to restructure; and dynamically update the other relationships to preserve the other relationships subsequent to generation of the new hierarchical data structure. Therefore, Claims 13-24 are deemed novel and allowable.

8.3 Applicant's third set of claims consists of Claims 25-36.

Independent Claim 25 is directed to a computer aided design system comprising a database comprising a stored design model and a processor to restructure a design model generated by a computer aided design system. The claim identifies the uniquely distinct features of:

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“receive from the input device a command to restructure the design model;
in response to the command to restructure, executing instructions to generate a new
hierarchical data structure comprising a new hierarchical relationship by changing a hierarchical
relationship of a first subset of the plurality of components with respect to other ones of the
plurality of components;
determine other relationships between components in the first hierarchical data structure
to change as a result of the command to restructure; and
dynamically update the other relationships to preserve the other relationships subsequent
to generation of the new hierarchical data structure”.

The closest prior art fails to teach or fairly suggest receive from the input device a command to restructure the design model; in response to the command to restructure, executing instructions to generate a new hierarchical data structure comprising a new hierarchical relationship by changing a hierarchical relationship of a first subset of the plurality of components with respect to other ones of the plurality of components; determine other relationships between components in the first hierarchical data structure to change as a result of the command to restructure; and dynamically update the other relationships to preserve the other relationships subsequent to generation of the new hierarchical data structure. Therefore, Claims 25-36 are deemed novel and allowable.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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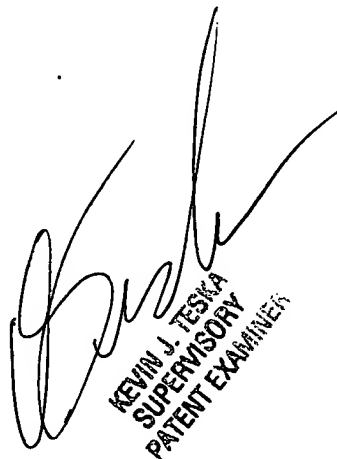
fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
December 6, 2004



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER